List of Panel Members

- **Bob Bishop -** *Chairman and CEO, SGI*
- **Dr. Thomas Edwards -** *Chief, Aviation Systems Division, Ames Research Center*
- **Dr. Philip Carrigan** - *ATM Strategic Programs, Raytheon*
- **Mr. Dennis Muilenburg** - *VP for ATM, Boeing*
- **Dr. George Donohue** - *George Mason University, Professor of Air Transportation Technology & Policy*

NASA and SGI

- 20 year partnership
- SGI supports NASA in all main sites
- NASA Ames was SGI's first customer
- NASA Ames and SGI are direct neighbors
- NASA Ames has always pushed SGI forward
- NASA Ames has the largest SGI machine: 1024p ccNUMA
- NASA Ames has built FutureFlight Central around SGI graphic supercomputers

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Airspace Management

- Very complex 3D real-time problem
- Continuous interaction between aircraft
- Continuous interaction between aircraft and ground control
- Continuous interaction between aircraft and the weather
- Individual aircraft design and performance characteristics

ATM In The Next 20 Years Will Require

- Unlimited amounts of Computing
- Unlimited amounts of Visualization
- Unlimited amounts of Data Storage
- Unlimited amounts of Telecommunications
- and highly intelligent Software to tie everything together

Both inflight as well as on-the-ground!

Moore's Law Will Drive Hardware Performance

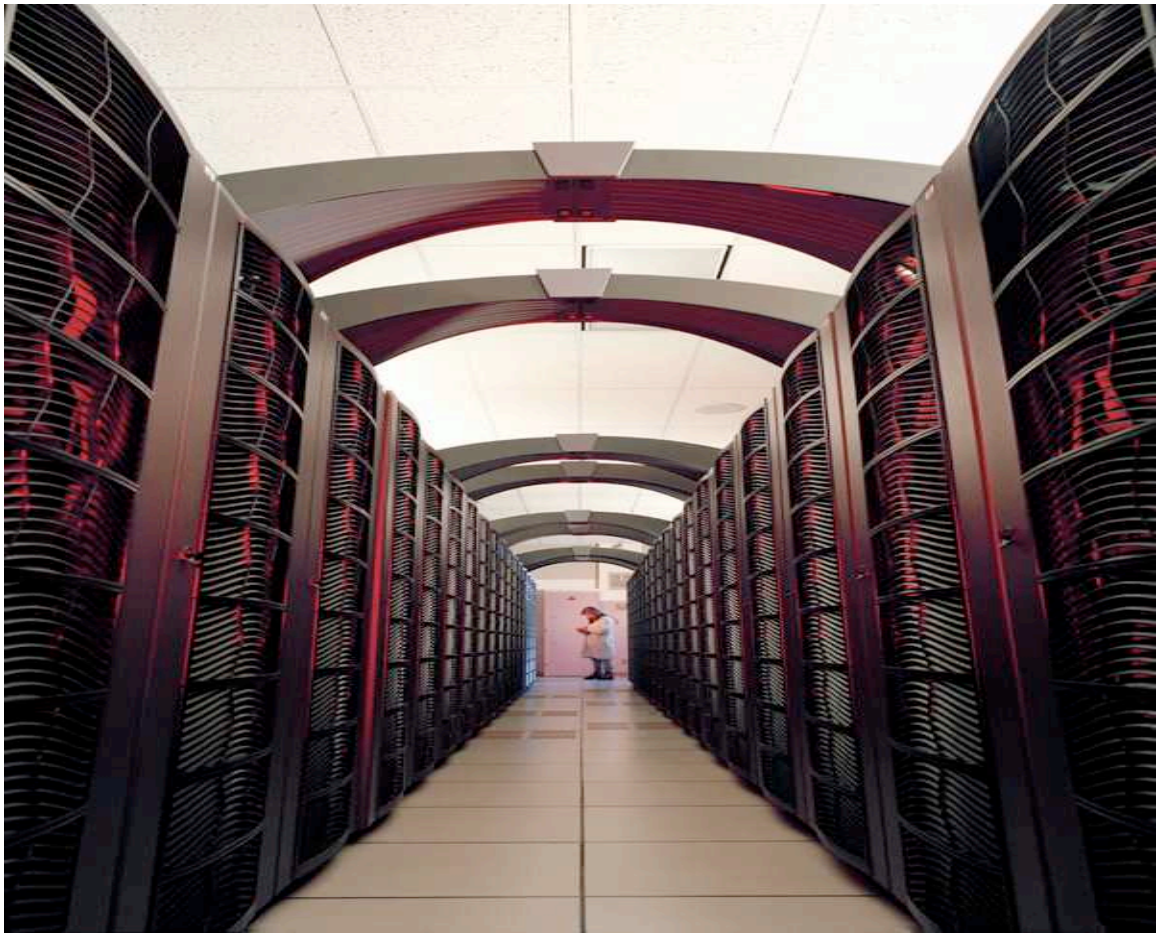
- 2X performance at 1/2 the price every 2 years
- 4X improvement in price/performance every 2 years
- 1,000X improvement in price/performance every 10 years
- 1,000,000X improvement in price/performance every 20 years

The CRAY 1 supercomputer was effectively miniaturized to the laptop over the last 20 years!

Parallelization and redundancy will ensure failsafe operations

The Intensive Use of IT in ATM in the Next 20 Years Will Allow

- Aircraft configurations to change in flight
- Constant coms between adjacent aircraft in flight
- Real-time weather data along the flight path
- Out of the window “clear viewing” in all weather conditions
- Out of the window “clear viewing” at night
- Flight control override in case of security threats
- National + global oversight and situational analysis



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